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| 10/658,828 | 09/09/2003 | Scott D. Garner | H1799-00210 | 2854 |
| 41396 | 7590 | 05/23/2005 | EXAMINER | |
| DUANE MORRIS LLP | | | NGUYEN, CHAU N | |
| P. O. BOX 1003 | | | ART UNIT | |
| 305 NORTH FRONT STREET, 5TH FLOOR | | | PAPER NUMBER | |
| HARRISBURG, PA 17108-1003 | | | 2831 | |

DATE MAILED: 05/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/658,828

Applicant(s)

GARNER, SCOTT D.

Examiner

Chau N Nguyen

Art Unit

2831

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6,9-15,17-21 and 24-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26 is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6,9-15,17-19,21,24 and 25 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3, 4, 9, 12 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3, lines 2-3, "said first thermal bus" lacks antecedent basis.

Claim 3, line 3, change "a" to --the--.

Claim 4, line 2, "a loop thermosyphon" is unclear to how this one relates to the one already recited in claim 1.

Claim 9, lines 2-3, "at least two loop-thermosyphons" is unclear to how these relate to the loop thermosyphon recited earlier in claim 1.

Claim 12, line 2, "said loop thermosyphon" is unclear as to which one since claim 1 recites "a loop thermosyphon" and claim 9 recites "at least two loop-thermosyphons".

Claim 19 appears to depend on claim 18, otherwise "said top wall", in line 4, lacks antecedent basis.

Also, through out the claims, please change the word "planer" to --planar--.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, 17, 18 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Hisano et al. (5,198,889).

Hisano et al. discloses a thermal energy management system (Fig. 25) comprising a planar heat pipe (62) having a first outer surface that is operatively engaged with at least one heat generating component (1) wherein the planar heat pipe is sized and shaped so as to spread thermal energy over an area larger than the area of the at least one heat generating component, and a thermal bus (60, 65,67) that is operatively engaged with a second outer surface of the heat pipe so as to transport thermal energy from the heat pipe to a heat sink (68), the thermal bus including a tubular evaporation portion of a loop thermosyphon (re claim 1). Hisano et al. also discloses a second thermal bus that is operatively engaged with the first thermal bus (top end of the slanting vessel 67) so as to transport thermal

energy from the first thermal bus to the heat sink (re claim 3), the evaporation plate (60,65) being positioned between a portion of the heat pipe and an evaporation tube (67a) of a loop thermosyphon so as to transport thermal energy from the heat pipe to the heat sink (re claim 17), the evaporation plate providing a physical and thermal interface between a top wall of the heat pipe and the evaporator tube of the loop thermosyphon (re claim 18). Claim 24 is method counterpart of claim 1.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 17, 19, 21 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hisano et al.

Hisano et al. discloses a thermal energy management system (Fig. 30) comprising an evaporator plate (203) formed from a substantially uniform thickness sheet of a thermally conductive material and a second evaporator plate positioned between a condensing portion of the first loop thermosyphon and an evaporator tube of a second loop thermosyphon. Hisano et al., in Figure 30, does

not disclose a planar heat pipe being positioned between the heat generating component (1) and the evaporator plates. However, Hisano et al., in Figure 25, discloses planar heat pipe being used and positioned between an evaporator plate and a heat generating component to transmit thermal energy from the heat generating component to the evaporator plate. Accordingly, it would have been obvious to one skilled in the art to use planar heat pipe as taught by Hisano et al., in Figure 25, between the heat generating component and the evaporator plate in the system of Figure 30 to effectively transmit the thermal energy from the heat generating component to the evaporator plate.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 4, 6, and 9-12 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 4, 9 and 11 of U.S. Patent No. 6,657,121. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed subject matter of the claimed invention as claimed in claims 4, 6, and 9-12 are disclosed by claims 4, 9 and 11 of Patent '121.

9. Claims 13-15 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 14 of U.S. Patent No. 6,657,121 in view of Hisano et al. Claim 14 of Patent '121 discloses the invention substantially as claimed except for the heat pipe being planar and being sized and shaped to spread thermal energy over an area larger than the area of the heat generating component. Hisano et al. discloses a thermal energy management system comprising a planar heat pipe (Fig. 25) which is sized and shaped to spread thermal energy over an area larger than the area of heat generating component. It would have been obvious to one skilled in the art to use the planar heat pipe as taught by Hisano et al. in the system of Patent '121 to effectively transfer heat from the heat generating component to the evaporator plate.

Allowable Subject Matter

10. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claim 26 is allowed.

12. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach or suggest a thermal management system comprising all the features as recited in the claims and in combination with the top surface of the planar heat pipe having at least two grooves (re claims 20 and 26).

Response to Arguments

13. Applicant's arguments with respect to claims 1, 17, 21, 24 and 25 have been considered but are moot in view of the new ground(s) of rejection.

Summary

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.**

See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau N Nguyen whose telephone number is 571-272-1980. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-2800 ext 31.

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The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Chau N Nguyen
Primary Examiner
Art Unit 2831